WHAT IS CLAIMED IS:

1. An inverted microscope comprising:

an image output port that forms an image of an observation sample to the external surface facing to an observer, at the front side of a microscope main body, below an observation tube to which eyepieces are attached,

wherein photographing devices configured that one of at least two kinds of photographing devices is selectively attachable/detachable to the image output port.

2. An inverted microscope according to claim 1, wherein the image of the observation sample is formed at the position protruded by a specified distance from the image output port,

and when attaching one of the photographing device, the TV camera, and the digital camera device, a photographing lens unit corresponding to any of the photographing device to the image output port, the TV camera, and the digital camera device, among plural photographing lens units having different photographing magnifications, is assembled into the end surface portion of the image output port in an attachable/detachable manner.

3. An inverted microscope according to claim 2, further comprising plural photographing lens units having different photographing magnifications

respectively in accordance with the photographing device, the digital camera device, and the TV camera,

and one of the plural photographing lens units is assembled therein according to the kind of the photographing device, the TV camera, and the digital camera device.

4. An inverted microscope according to claim 3, wherein the contraction magnification of the photographing system is so set that the magnification of the image of the observation sample displayed by the display means should be equal to the magnification of the image of the observation sample observed by the eyepieces.

5. An inverted microscope according to claim 3, wherein when displaying the image photographed by the photographing means by the display means, a signal processing portion having an electronic zoom function for magnifying the image by an optional magnification is arranged,

and the contraction magnification of the photographing optical system (β) is made so that the area of the image photographed by the photographing means should be almost equal to the area observed by the eyepieces ($\beta \fallingdotseq K/FN$, when the width across of the photographing element is set as K, and the number of views of the eyepieces is set as FN), and the magnification of the electronic zoom is made variable, thereby

the magnification of the image of the observation sample displayed by the display means can be made equal to the magnification of the image of the observation sample observed by the eyepieces.

6. An inverted microscope according to claim 3, further comprising: means for storing plural magnifications of the image of the observation sample displayed by the display means changed by the electronic zoom function; and means for setting the magnification of the image of the observation sample displayed by the display means to an optional magnification.

7. An inverted microscope according to claim 2, wherein the contraction magnification of the photographing system is so set that the magnification of the image of the observation sample displayed by the display means should be equal to the magnification of the image of the observation sample observed by the eyepieces.

8. An inverted microscope according to claim 2, wherein when displaying the image photographed by the photographing means by the display means, a signal processing portion having an electronic zoom function for magnifying the image by an optional magnification is arranged,

and the contraction magnification of the photographing optical system (β) is made so that the

area of the image photographed by the photographing means should be almost equal to the area observed by the eyepieces ($\beta \fallingdotseq K/FN$, when the width across of the photographing element is set as K, and the number of views of the eyepieces is set as FN), and the magnification of the electronic zoom is made variable, thereby the magnification of the image of the observation sample displayed by the display means can be made equal to the magnification of the image of the observation sample observed by the eyepieces.

9. An inverted microscope according to claim 2, further comprising: means for storing plural magnifications of the image of the observation sample displayed by the display means changed by the electronic zoom function; and means for setting the magnification of the image of the observation sample displayed by the display means to an optional magnification.

10. An inverted microscope according to claim 1, wherein the at least two kinds of photographing devices include: a photographing device that exposes and forms the image of the observation sample onto a film surface thereof; a TV camera that photographs the image of the observation sample by a photographing element thereof and outputs image data thereof; and a digital camera device that photographs the image of the observation sample and can record the image data as a still image

into a recording medium.

11. An inverted microscope according to claim 10, wherein said photo photographing device can attach at least a first camera and a second camera to a microscope main body, further comprising:

a light path switching mechanism that guides an image forming light flux from the microscope main body to at least one of the first camera and the second camera;

a photographing shutter arranged in a light path of the image forming light flux in the light incoming side than the light path switching mechanism; and

shutter mechanisms that are arranged in the light path toward the first camera side split by the light path switching mechanism, and block the light path in synchronization with the switching actions of the light path switching mechanism.

12. An inverted microscope according to claim 11, wherein, in a state where the photographing shutter and the shutter mechanisms are closed, a first space that includes part of the light path of the image forming light flux toward the first camera, and is closed completely by the first camera and the shutter mechanisms, and a second space that includes the light path of the image forming light flux toward the light path switching mechanism and the shutter mechanisms, and is closed completely by the photographing shutter

and the shutter mechanisms and the second camera are formed.

13. An inverted microscope according to claim 11, wherein the shutter mechanism comprising:

a light path switching lever for pulling and inserting operation;

a throttle plate that has an opening for letting the image forming light flux toward the first camera go through, and moves to the position to let the image forming light flux go through the opening or to the position to block the image forming light flux, in synchronization with to the pulling and inserting operation of the light path switching lever;

a mechanical shutter main body that is formed in a size at least enough to block the opening, and can open and close the opening; and

a link mechanism for moving the mechanical shutter main body to the position to close the opening before the throttle plate blocks the image forming light flux in synchronization with the movement of the throttle plate.

14. An inverted microscope according to claim 11, wherein said light path switching mechanism comprising:

position detecting sensors that detect to which of the first camera or the second camera the image forming light flux from the microscope main body is guided; and

means that makes the photographing shutter

available only when the position detecting sensors detect that the image forming light flux from the microscope main body is guided to either the first camera or the second camera.

15. An inverted microscope according to claim 10, wherein the image formed on the image output port is an image that is reflected once by a reflection member in a light path from the observation sample to the image output port, and

the image formed on the film surface of the photographing device is a front image that is reflected even-numbered times by a reflection member in the light path from the observation sample to the film surface, by providing the reflection member in the photographing device and generates odd-numbered times of reflections in the light path from the image output port to the film surface.

16. An inverted microscope according to claim 15, wherein the image of the observation sample is formed at the position protruded by a specified distance from the image output port,

and when attaching one of the photographing device, the TV camera, and the digital camera device, a photographing lens unit corresponding to any of the photographing device to the image output port, the TV camera, and the digital camera device, among plural photographing lens units having different photographing

magnifications, is assembled into the end surface portion of the image output port in an attachable/detachable manner.

17. An inverted microscope according to claim 16, further comprising plural photographing lens units having different photographing magnifications respectively in accordance with the photographing device, the digital camera device, and the TV camera,

and one of the plural photographing lens units is assembled therein according to the kind of the photographing device, the TV camera, and the digital camera device.

18. An inverted microscope according to claim 16, wherein the contraction magnification of the photographing system is so set that the magnification of the image of the observation sample displayed by the display means should be equal to the magnification of the image of the observation sample observed by the eyepieces.

19. An inverted microscope according to claim 16, wherein when displaying the image photographed by the photographing means by the display means, a signal processing portion having an electronic zoom function for magnifying the image by an optional magnification is arranged,

and the contraction magnification of the photographing optical system (β) is made so that the area

of the image photographed by the photographing means should be almost equal to the area observed by the eyepieces ($\beta \fallingdotseq K/FN$, when the width across of the photographing element is set as K, and the number of views of the eyepieces is set as FN), and the magnification of the electronic zoom is made variable, thereby the magnification of the image of the observation sample displayed by the display means can be made equal to the magnification of the image of the observation sample observed by the eyepieces.

20. An inverted microscope according to claim 16, further comprising: means for storing plural magnifications of the image of the observation sample displayed by the display means changed by the electronic zoom function; and means for setting the magnification of the image of the observation sample displayed by the display means to an optional magnification.

21. An inverted microscope comprising:

an image forming optical system including objective lenses arranged below an observation sample placed on a stage of a microscope main body;

an optical element which forms an image of the observation sample at the position where an image forming light flux obtained by the image forming optical system is polarized to an observer side from the optical axis of the objective lens;

photographing means for photographing an image of the observation sample;

an image recording section configured to record image signals photographed by the photographing means; and

display means attached to the surface facing to the observer at the front of the microscope main body, for displaying images photographed by the photographing means.

22. An inverted microscope according to claim 21, wherein the display angle of the display means is variable.

23. An inverted microscope according to claim 21, further comprising:

a light path splitting means for splitting the light path of an image of an observation sample formed by the image forming optical system;

a relay optical system for guiding to an eyepiece the light flux from an observation sample of one light path split by the light path splitting means; and

a photographing optical system set to a specified contraction magnification for guiding to the photographing means the light flux from an observation sample of the other light path split by the light path splitting means.

24. An inverted microscope according to claim 23, wherein the display angle of the display means is

variable.

25. An inverted microscope according to claim 15, wherein said photo photographing device can attach at least a first camera and a second camera to a microscope main body, further comprising:

a light path switching mechanism that guides an image forming light flux from the microscope main body to at least one of the first camera and the second camera;

a photographing shutter arranged in a light path of the image forming light flux in the light incoming side than the light path switching mechanism; and

shutter mechanisms that are arranged in the light path toward the first camera side split by the light path switching mechanism, and block the light path in synchronization with the switching actions of the light path switching mechanism.

26. An inverted microscope according to claim 25, wherein, in a state where the photographing shutter and the shutter mechanisms are closed, a first space that includes part of the light path of the image forming light flux toward the first camera, and is closed completely by the first camera and the shutter mechanisms, and a second space that includes the light path of the image forming light flux toward the light path switching mechanism and the shutter mechanisms, and is closed completely by the photographing shutter

and the shutter mechanisms and the second camera are formed.

27. An inverted microscope according to claim 25, wherein the shutter mechanism comprising:

a light path switching lever for pulling and inserting operation;

a throttle plate that has an opening for letting the image forming light flux toward the first camera go through, and moves to the position to let the image forming light flux go through the opening or to the position to block the image forming light flux, in synchronization with to the pulling and inserting operation of the light path switching lever;

a mechanical shutter main body that is formed in a size at least enough to block the opening, and can open and close the opening; and

a link mechanism for moving the mechanical shutter main body to the position to close the opening before the throttle plate blocks the image forming light flux in synchronization with the movement of the throttle plate.

28. An inverted microscope according to claim 25, wherein said light path switching mechanism comprising:

position detecting sensors that detect to which of the first camera or the second camera the image forming light flux from the microscope main body is guided; and

means that makes the photographing shutter

available only when the position detecting sensors detect that the image forming light flux from the microscope main body is guided to either the first camera or the second camera.

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